

## **Meeting the Hunger Millennium Development Goal**

(transcript)

Coromandel Lecture  
National Food Security Summit  
February 5, 2004  
New Delhi, India

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Mr. President, Dr. Ram, Mr. Medrano of the World Food Programme, Dr. M.S. Swaminathan, universally admired and colleague of mine in the UN Millennium Project, other distinguished members of the dais, and ladies and gentlemen: Let me thank you for giving me the honor to be with you in this wonderful lecture series which has had many distinguished people in the past; I feel very privileged to add my own words today. I also bring the greetings of UN Secretary-General Kofi Annan, who is deeply committed to achieving all the Millennium Development Goals, of which ending extreme poverty and hunger are crucial.

It is wonderful to hear that we stand at a time when India is committed, perhaps as never before, to actually ending hunger. The call for a hunger-free India by the year 2007 is an inspiring and achievable goal, and has been a dream of humanity, but not a dream that has been within reach until now. Now it is not only within reach, but it would be, I think one could say, a terrible crime not to reach it. The goal of a hunger-free world is no longer a dream, but a very practical, achievable reality if we choose to make it so. That, of course, has been the objective of the international community in recent years, but we know that aspirations often are not followed by actual commitment. I will speak about some of the ways that we could actually meet aspirations with reality, not only in India, but also throughout the world.

As you are no doubt aware, the world community has made a bold commitment to cut world hunger by half by the year 2015. This is the first goal of the Millennium Development Goals, which were adopted by the 147 world leaders that came together at the Millennium Assembly in September 2000. They reiterated the goal set at the World Food Summit a few years earlier in Rome, a goal still not realized. Indeed, while the world has called for halving the number of people living in extreme hunger by the year 2015, the data tells a harsh story. In fact, the numbers of extreme hungry in the world have hovered at around 900 million since the goal was announced, and in some parts of the world, particularly in sub-Saharan Africa, the numbers of the extreme hungry are rising significantly.

We are meeting here today not only for this occasion, but also for the UN Millennium Project's Task Force on Hunger, which includes many of the world's most

distinguished thinkers on the issues of hunger. The task force is co-chaired by Dr. Swaminathan and by my colleague Dr. Pedro Sanchez, another leading scientist finding ways to bring modern science to bear on this problem. I want to share with you a few of the thoughts that we have developed in the first year and a half of work of this project. I think there is no doubt among the members of the UN Millennium Task Force on Hunger, which will present its recommendations to the Secretary-General next year, that the goal of reducing hunger by half by the year 2015 is utterly achievable. Indeed, I think, I can speak for all the members of the Task Force by saying that the goal of ending extreme hunger on the Planet is also achievable, not just as a dream for the distant future, but as a practical realization within the coming years. Why is this?

I think it is fitting that this is a lecture series sponsored by the Coromandel Fertiliser company, because fertilizer is a good starting point for the realization of this dream of ending hunger. It has been said that the technological innovation of chemical fertilizer, the Haber-Bosch Process, which takes atmospheric nitrogen and hydrogen and synthesizes a chemical nitrogen fertilizer, may be the most consequential technological discovery of the 20<sup>th</sup> century. That is a surprising statement, because the 20<sup>th</sup> century was an age of critical technologies. But looking back, there is no doubt that what the advent of chemical fertilizer allowed was the most spectacular revolution in food production in the history of the planet. It had multiple and hugely consequential effects creating a tidal wave of human change—not all of it is immediately positive, but, I think, utterly positive in the end, if we make it so. The most important thing that the Haber-Bosch process allowed was the advent of chemical fertilizers and modern agronomic science that was to support a world population that went from about one and a half billion people at the turn of the 20<sup>th</sup> century to a population of more than 6 billion people today, one that is expected to continue to rise to nearly 9 billion people by the middle of the 21<sup>st</sup> century. Without this advent, there is no way that the planet could sustain that number of people. We would have headed off towards widespread mass hunger as an inevitable feature of the human society. Agricultural productivity soared in the 20<sup>th</sup> century; fertilizer was at its base. Fertilizer permitted the combination of chemically added soil nutrients with the advances of genetic science and other agronomic sciences to produce the remarkable revolution – the Green Revolution, one that Dr. Swaminathan and many other people here played such a fundamental role in bringing about.

Although a macroeconomist, not an agronomist, I can say one thing with a lot of confidence: the Green Revolution underpins India's tremendous economic advance that we are seeing today. The Green Revolution underpins India's sustained economic growth rates of seven or eight per cent per year which promise once and for all to eradicate extreme poverty in this country, and it similarly underpins China's doubling of living standards every decade or so during the last 25 years, which will probably continue in the future.

Why is that? The Green Revolution not only helped to feed a region that had suffered from chronic bouts of extreme hunger since time immemorial, but it also raised nutrition levels and production levels of farmers. The Green Revolution also set in motion several fundamental processes of economic development. First was the

revolution of improved nutritional intake at the individual level and all the subsequent health benefits. The experiences of modern economic growth in Europe and the more recent Green Revolution in Asia have been similar. They have both prolonged life, improved human health, and reduced the incidence of deadly diseases. The improvement in human health has vastly raised individual productivity.

The Green Revolution does one more thing, which is extremely important. By raising the level of output for farmers, it makes it possible for urbanization to take place, and that too is part of economic development and economic growth. When farm productivity is very low, society tends to be mostly subsistence farmers. As output per farm rises, it enables a smaller and smaller proportion of the population to feed the entire population. In the United States, where this process became most advanced in the world in the last century, output per farm is so high that less than two per cent of the population feeds the other 98 per cent, while still sending large amounts of food abroad.

That process is also underway in Asia. We saw it clearly in India in the 1970s and 80s, and we saw it equally clearly in China in the 1970s and 80s with the decline of Maoism. During this time, individual farmers became responsible for themselves and their land once again, and food productivity rose in the early 1980s. That was the precursor to China's tremendous economic growth in the 1980s, 90s, and in this new century. Clearly, fertilizers were critically important in raising living standards and triggering broad based economic development.

Despite all this knowledge and science, almost one-sixth of the planet and around one-fifth of India's population suffers from chronic hunger. This should be a shock and a matter of highest priority for India's society and for the world. There are three great challenges that need to be faced on a global scale. The first is to bring the underlying power of the Green Revolution to places where it has not yet reached, especially Sub-Saharan Africa. Sub-Saharan Africa is a vast region that in many ways resembles South and East Asia before their Green Revolution. There is chronic and widespread hunger, hundreds of millions of people living at subsistence, farmers trying to eke out subsistence, and soils depleted of nutrients without receiving the inputs of fertilizer and other agronomic advances. The first goal of the UN Millennium Project's Task Force on Hunger is to help promote a Green Revolution in Africa so that Africa can follow a similar development path to Asia – rising agricultural productivity leading to sustained economic growth. This has not yet happened. The Task Force is focusing its work on Africa, because farmers in parts of the continent produce less than one tonne of maize per hectare, not enough to feed a family, much less to get goods to market and partake of modern economic life. The core of the problem is the lack of those components that constitute a Green Revolution: the soil nutrients, the water and, to a lesser extent, the appropriate germ plasm. Our focal point is primarily on soil nutrients and water management, as the two critical inputs that could help trigger Africa's economic growth. We will be helping to organize a meeting of African Heads of State in July 2004 where we hope that these lessons can be taken in as a critical starting point for Africa to achieve the same kind of breakthrough that is so reliably underway in India.

The second major challenge of the Task Force is the unfinished agenda for India and its neighbours. What is needed is less an agricultural revolution at this point, but more a social revolution to end extreme poverty by ensuring that society and economy are inclusive enough to reach all parts of this society. India lives the paradox today where it produces ample food for itself, is a net exporter of food, and can even brush off a failed monsoon in a way that 40 or 50 years ago would have led to disaster here. Yet, there are still around 200 million hungry people in this country. The situation is different from Africa. Clearly, this is not a case of simply bringing fertilizer and a Green Revolution. That has been done. The question is how to ensure that people marginalized in society—scheduled tribes, poor people living in forestry regions, and, perhaps most importantly, women and young children—that go hungry even in villages with enough to eat and who do not have the proper health care and attention. The basic needs have to be secured in today's booming economy. India could be free of hunger by the year 2007, and free of extreme poverty soon after. This is the generation that could end illiteracy, hunger, and extreme suffering from lack of health care and basic amenities, while establishing basic needs of safe drinking water and sanitation. This is within economic and technical reach, but at this point it is a matter more of political will and social organization than of technology or economic limitation. India has set these goals for itself, but has not yet secured the means for their fulfillment. These are goals within national plans, but the plans are not yet backed up by the specific means of implementation. Besides Africa, that is a second fundamental goal of the Task Force – to help India in its efforts to end hunger. This will require not only inputs to agriculture, but also inputs to village life more generally. That means access to real health care, including mothers having access to pre-natal care and monitoring to end the scourge of low birth-weight babies that afflicts almost 30 per cent of India's births today. This is something that can be done, and the costs are not outlandish. And with modest help from international donors and a much greater effort from India's Government and civil society, these are goals that can be met.

A third challenge will be the remaining agricultural challenges remaining even after hunger is eliminated. The 21<sup>st</sup> century will still bring massive challenges in basic agriculture. First, populations are not going to stop rising any time soon, although I would hope that India's population would stop rising sooner rather than later. India should prioritize sexual and reproductive health policy as crucial to long-term successful development. A growing population means food supply should continue to rise. Secondly, environmental stresses must be managed using sustainable agricultural systems which help protect an increasingly fragile environment. The problems of deforestation, salinization of irrigated soils, loss of biodiversity, and depleted fisheries exist worldwide. The world needs an agricultural system that is environmentally sustainable. Third, the world must manage the challenge of global climate change which could severely affect the Indian sub-continent. We must begin taking seriously the issues of mitigating long term climate change by having smarter science-based energy systems that are not so threatening to our global climate, as well as adapting to climate change already underway. This is going to be a tremendous challenge, and it is going to call on us to exercise the most advanced scientific thinking. Agro-biotechnology will play a role in helping to design crops that can adjust to the climate as climate change occurs. We have

to do much more to tackle the more extreme kinds of climate change by smarter energy systems. The US and India need to cooperate on developing smarter energy systems with major resource investments, mainly from the US, whose contribution to creating climate change is vastly more than India's. Countries are going to have to work together to solve these problems in the future.

Finally, we are going to face continuing challenges of nutrition and health even when we have an aggregate food surplus, to which agronomic science can contribute as well. We are on the verge of a breakthrough to help make our food more nutritious and our diet safer. As India develops, increasing intake food can also mean increasing epidemics of obesity, of cardiovascular disease, etc. India surely should resist adopting all the bad habits of American fast food, yet this spread of poor dietary practice is actually one of the real challenges for the 21<sup>st</sup> century. The world, ironically, is roughly balanced between those who are under-nourished and those who are over-nourished, and both are malnourished in serious ways. There are more than 1 billion overweight people today in the world. At the same time, we have nearly a billion people suffering from undernutrition. This is a challenge to change people's behaviour through appropriate education, and a challenge for agronomics to deliver safer and more nutritious foods, including foods that are fortified with the micronutrients lacking in the diets of many populations around the world.

It is an honour to be here, especially among so many people who have played such an enormous role in the successes that have been achieved to date. It is precisely because of those successes in science, industry, and leadership, that I think we can be hopeful about actually achieving the high aspirations that have been with us so long and unfulfilled for so long. The UN Millennium Project, which I have the honour to direct, is absolutely committed to helping you in any way to fulfill these great goals.

Thank you very much.